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Entropic Communications, LLC

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS, LLC;
AND COMCAST CABLE
COMMUNICATIONS MANAGEMENT,
LLC,

Defendants.

Case No. 2:23-cv-1050-JWH-KES

~~FIRST~~ SECOND AMENDED
COMPLAINT FOR PATENT
INFRINGEMENT

DEMAND FOR JURY TRIAL

1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for
2 patent infringement against Comcast Corporation (“Comcast Corp.”); Comcast Cable
3 Communications, LLC (“Comcast Communications”); and Comcast Cable
4 Communications Management, LLC (“Comcast Management”) (collectively
5 “Comcast”) and in support thereof alleges as follows:

6 1. This is a civil action arising under the patent laws of the United States,
7 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on Comcast’s
8 infringement of U.S. Patent Nos. 8,223,775 (the “775 Patent”), 8,284,690 (the
9 “690 Patent”), 8,792,008 (the “008 Patent”), 9,210,362 (the “362 Patent”),
10 9,825,826 (the “826 Patent”), 10,135,682 (the “682 Patent”), 11,381,866 (the “866
11 Patent”), ~~and~~ 11,399,206 (the “206 Patent”), 11,785,275 (the “275 Patent”), and
12 9,866,438 (the “438 Patent”) (collectively, the “Patents-in-Suit”).

13 THE PARTIES

14 2. Entropic is a Delaware limited liability company with an office at
15 7150 Preston Road, Suite 300, Plano, Texas 75024.

16 3. Entropic is the owner by assignment to all right, title, and interest to the
17 Patents-in-Suit. Entropic is the successor-in-interest of the Patents-in-Suit.

18 4. Upon information and belief, Comcast Corp. is a corporation organized
19 and existing under the laws of Pennsylvania, with a principal place of business at
20 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

21 5. Comcast Corp. has, as its registered agent in California, CT Corporation
22 System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

23 6. Comcast Corp., along with the other defendants, develops, markets, sells,
24 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television
25 services and equipment to customers.

26 7. Comcast Communications is a limited liability company organized and
27 existing under the laws of Delaware, with a principal place of business at 1701 JFK
28

1 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast
2 Communications is a subsidiary of Comcast Corp.

3 8. Comcast Communications has, as its registered agent in California,
4 CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

5 9. Comcast Communications, along with the other defendants, develops,
6 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable
7 television services and equipment to customers.

8 10. Comcast Management is a limited liability company organized and
9 existing under the laws of Delaware, with a principal place of business at 1701 JFK
10 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast
11 Management is a subsidiary of Comcast Corp.

12 11. Comcast Management has, as its registered agent in California, CT
13 Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

14 12. Comcast Management, along with the other defendants, develops,
15 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable
16 television services and equipment to customers.

17 13. Comcast Corp. and/or Comcast Communications owns or leases, and
18 maintains and operates, several stores in this district by and through subsidiary limited
19 liability companies that they own, manage, and control, including Comcast of Santa
20 Maria, LLC and Comcast of Lompoc LLC. Upon information and belief, Comcast
21 Corp. and/or Comcast Communications (and/or other personnel employed by them)
22 negotiates and signs agreements on behalf of each of these entities.

23 14. Upon information and belief, Comcast Corp. and/or Comcast
24 Communications are the corporate managers of their subsidiary LLCs that own or
25 lease property in this district, and that own, store, sell, demonstrate, and lease
26 equipment in this district. Comcast Corp. and/or Comcast Communications have the
27 right to exercise near total control of each entity’s operations through its LLC
28 agreements with each entity.

1 15. In each of those stores, Comcast Corp. and/or Comcast Communications
2 owns and stores equipment such as cable modems and set top boxes (“STBs”),
3 including the Accused Cable Modem Products (defined below), Accused Set Top
4 Products (defined below) and demonstrates ~~services~~ the Accused Services (defined
5 below) provided via those products to Comcast customers by and through subsidiary
6 limited liability companies that it manages and controls.

7 16. Upon information and belief, Comcast Corp. and/or Comcast
8 Communications employs personnel that install, service, repair and/or replace
9 equipment, as appropriate, in this district by and through subsidiary limited liability
10 companies that it manages and controls.

11 17. Upon information and belief, Comcast Corp. and/or Comcast
12 Communications have two wholly owned subsidiaries in this Judicial District of
13 Central California (“District”) that serve as their agents.

14 18. Comcast of Santa Maria, LLC (“Comcast Santa Maria”) is a limited
15 liability company organized and existing under the laws of Pennsylvania, with a
16 principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.
17 Comcast Santa Maria is a subsidiary of Comcast Corp.

18 19. Comcast Santa Maria, along with the other defendants, markets, sells,
19 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television
20 services and equipment to customers.

21 20. Comcast of Lompoc, LLC (“Comcast Lompoc”) is a limited liability
22 company organized and existing under the laws of Pennsylvania, with a principal
23 place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Comcast
24 Lompoc is a subsidiary of Comcast Corp.

25 21. Comcast Lompoc, along with the other defendants, markets, sells, offers
26 for sale and/or provides “Comcast” and “Xfinity” branded cable television services
27 and equipment to customers.

1 22. Upon information and belief, Comcast Communications, Comcast,
2 Management, Comcast Santa Maria, and Comcast Lompoc are the agents of Comcast
3 Corp. Upon information and belief, Comcast Corp. has complete and total control
4 over its agents Comcast Communications, Comcast Management, Comcast Santa
5 Maria, and Comcast Lompoc. On information and belief, Comcast Corp. shares
6 management, common ownership, advertising platforms, facilities, distribution chains
7 and platforms, stores, and accused product lines and products involving related
8 technologies with its agents, including at least Comcast Communications, Comcast
9 Management, Comcast Santa Maria, and Comcast Lompoc.

10 23. For example, Comcast Corp., Comcast Communications, Comcast
11 Management, Comcast Santa Maria, and Comcast Lompoc all have the same principal
12 place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

13 24. The Comcast “Xfinity Residential Services Agreement” purports to bind
14 Comcast’s customers, including those customers in this District, to an agreement with
15 Comcast Communications for, *inter alia*, the Accused Services that Comcast’s
16 customers receive through the infringing use of the Accused Cable Modem Products
17 and the Accused Set Top Products.¹ This agreement further provides that an entity
18 other than Comcast Communications provides the services. Upon information and
19 belief, the entity that provides the services to Comcast’s customers and subscribers is
20 Comcast Management.

21 25. Comcast Management further shares a leadership team with Comcast
22 Corp.² For example, Brian Roberts is the Chairman and Chief Executive Officer of

23 ¹ <https://www.xfinity.com/Corporate/Customers/Policies/SubscriberAgreement>.

24 ² Compare names found in Exhibit A to the attached
25 [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/do](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)
26 [cuments/video-franchising-and-broadband-analysis/video-franchising-main/applicatio](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)
27 [ns-received--by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf)
28 with the bios of the identified personnel at Comcast’s corporate leadership website, <https://corporate.comcast.com/company/leadership>.

1 both Comcast Management and Comcast Corp.; Daniel Murdock is Executive Vice
2 President and Chief Accounting Officer of both Comcast Corp. and Comcast
3 Management; Francis Buono is Executive Vice President of Legal Regulatory Affairs
4 and Senior Deputy General Counsel of both Comcast Corp. and Comcast
5 Management; and Karen Buchholz is Executive Vice President, Administration of
6 both Comcast Corp. and Comcast Management.

7 **PRE-SUIT DISCUSSIONS**

8 26. Prior to filing this Complaint, Entropic sent a communication by physical
9 means to Comcast on August 9, 2022, in an attempt to engage Comcast and/or its
10 agents in good faith licensing discussions regarding Entropic's patent portfolio,
11 including the Patents-in-Suit.³ Comcast replied to the communication on October 10,
12 2022, asking for additional information. On December 23, 2022, Entropic sent
13 Comcast another communication regarding a separate license to Entropic's patents for
14 the field of the standardized networking technology commonly called MoCA, and also
15 seeking to discuss with Comcast a typical non-disclosure agreement in order to share
16 such information.

17 **ENTROPIC'S LEGACY AS A CABLE INNOVATOR**

18 27. Entropic Communications Inc. ("Entropic Inc."), the
19 predecessor-in-interest to Entropic as to the Patents-in-Suit, was founded in San
20 Diego, California in 2001 by Dr. Anton Monk, Itzhak Gurantz, Ladd El Wardani and
21 others. Entropic Inc. was exclusively responsible for the development of the initial
22 versions of the Multimedia over Coax Alliance ("MoCA") standards, including
23 MoCA 1.0, ratified in 2006 and MoCA 1.1, ratified in 2007, and was instrumental in
24 the development of MoCA 2.0, ratified in 2010. It also developed Direct Broadcast
25 Satellite ("DBS") Outdoor Unit ("ODU") single wire technology and System-on-Chip
26

27 ³ The '206 Patent was not included in the list of issued Entropic patents discussed in
28 the communication sent on August 9, 2022.

1 (“SoC”) solutions for set-top boxes (STBs) in the home television and home video
2 markets. Entropic was widely known in the cable industry for these innovations and
3 its foundational development of MoCA.

4 28. Under the technical guidance of Dr. Monk, Entropic Inc. grew to be
5 publicly listed on the NASDAQ in 2007. After the public listing, the company
6 acquired RF Magic, Inc. in 2007, a company specializing in DBS ODU technology
7 and related hardware.

8 29. Additional growth between 2007 and 2015 bolstered the technical
9 expertise of Entropic Inc. with respect to signal acquisition, stacking, filtering,
10 processing, and distribution for STBs and cable modems.

11 30. For years, Entropic Inc. pioneered innovative networking technologies,
12 as well as television and internet-related technologies. These technologies simplified
13 the installation required to support wideband reception of multiple channels for
14 demodulation, improved home internet performance, and enabled more efficient and
15 responsive troubleshooting and upstream signal management for cable providers.
16 These innovations represented significant advances in the field, simplified the
17 implementation of those advances, and reduced expenses for providers and customers
18 alike.

19 **MAXLINEAR’S TRANSFER OF PATENTS TO ENTROPIC**

20 31. In 2015, MaxLinear, Inc. and MaxLinear, LLC (collectively,
21 “MaxLinear”)—leading providers of radio-frequency, analog, digital, and
22 mixed-signal semiconductor solutions—acquired Entropic Inc., as well as the
23 pioneering intellectual property developed by Dr. Monk and his team.

24 32. Plaintiff Entropic was established in 2021 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED]
28 [REDACTED]

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 35. [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 36. [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 37. Entropic has the full right to pursue the patent infringement claims
18 asserted in this action against Comcast.

19 A. [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24

25

26 [REDACTED]

27 [REDACTED]

28 [REDACTED]

1 39. [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED] [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 41. [REDACTED]
10 [REDACTED]
11 [REDACTED] [REDACTED]
12 [REDACTED]
13 [REDACTED] [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 44. [REDACTED]
17 [REDACTED]
18 [REDACTED] [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED] [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 47. [REDACTED]
25 [REDACTED]
26 [REDACTED]

1 48. [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED] [REDACTED]
5 [REDACTED]
6 [REDACTED] [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED] [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 52. [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 53. [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED] [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED] [REDACTED]
28 [REDACTED]

1 [REDACTED]
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4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 57. [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 B. [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]

21 **C. Comcast Has, and Continues, to Willfully and Intentionally Infringe**
22 **Entropic's Patents**

23 60. The Patents-in-Suit are the result of years of research and development in
24 satellite and cable technology. These innovations are utilized by Comcast to provide
25 enhanced and expanded services to customers, which in turn has increased revenues
26 for Comcast while at the same time reducing costs.

27 61. Entropic filed a patent infringement suit against Charter
28 Communications, Inc. ("Charter") in the Eastern District of Texas, Case No.

1 2:22-CV-00125-JRG (“the Charter Suit”), on April 27, 2022, asserting the ’775
2 Patent, the ’690 Patent, the ’008 Patent, the ’362 Patent, the ’826 Patent, and the ’682
3 Patent against Charter’s provision of cable television and internet services, cable
4 modem products and STBs.

5 62. Upon information and belief, Comcast analyzed the claims in the Charter
6 Suit and the asserted patents.

7 63. Upon information and belief, Comcast analyzed its products’
8 functionality in light of the patents asserted in the Charter Suit.

9 64. Upon information and belief, Comcast monitored the ongoing
10 prosecution of the ’362 Patent family, and therefore was aware the ’866 Patent issued
11 on July 5, 2022, and the ’206 Patent issued on July 26, 2022.

12 65. Upon information and belief, Comcast analyzed its products’
13 functionality in light of the ’866 Patent.

14 66. Upon information and belief, Comcast analyzed its products’
15 functionality in light of the ’206 Patent.

16 67. Upon information and belief, Comcast requested indemnification from
17 Comcast’s suppliers for each of the patents asserted against Charter, including the
18 MoCA related patents, prior to Entropic filing the current action.

19 68. Entropic filed a patent infringement suit against Dish Network
20 Corporation, DISH Network, LLC, and Dish Network Service, LLC (collectively,
21 “Dish”) in the Eastern District of Texas, Case No. 2:22-CV-00076, on March 9,
22 2022, asserting infringement of three Entropic patents, including the ’008 Patent (the
23 “Dish Suit”).

24 69. Entropic filed a patent infringement suit against DirecTV, LLC, AT&T,
25 Inc., AT&T Services, Inc., and AT&T Communications, LLC in the Eastern District
26 of Texas, Case No. 2:22-CV-00075 on March 9, 2022, asserting infringement of
27 three Entropic patents, including the ’008 Patent (the “DirecTV Suit”).
28

1 70. Upon information and belief, Comcast discussed the Charter Suit, Dish
2 Suit, and DirecTV Suit with RPX Corporation (“RPX”). Either before or shortly after
3 its discussions with RPX, Comcast substantively reviewed and analyzed the patents
4 asserted in the Charter Suit, Dish Suit, and DirecTV Suit.

5 71. Upon information and belief, Comcast subsequently suggested that RPX
6 reach out to Entropic to try to resolve the matters.

7 72. Comcast also attached to its own motion to dismiss [REDACTED]
8 [REDACTED]
9 [REDACTED] See Dkt. No.
10 39-1, Ex. A. [REDACTED]
11 [REDACTED]
12 [REDACTED]

13 73. Comcast also willfully infringed two other MaxLinear patents no later
14 than March 20, 2019. Specifically, U.S. Patent No. 10,582,515 assigned to and
15 prosecuted by Comcast cites to two patents assigned to MaxLinear, U.S. Patent Nos.
16 9,178,765 and 9,419,858. These two MaxLinear patents were cited by the examiner in
17 a non-final rejection on March 20, 2019. On information and belief, Comcast
18 infringes at least claim 1 of both the ’765 and ’858 patents. On information and belief,
19 no later than that date, Comcast substantively reviewed and analyzed the ’765 and
20 ’858 patents. On information and belief, Comcast has willfully infringed the ’765 and
21 ’858 patents beginning no later than March 20, 2019.

22 **1. Comcast Willfully Infringed, and Continues to Infringe, Entropic’s**
23 **MoCA Patents**

24 74. Comcast invested in Entropic once in 2003, and again in 2006.

25 75. Upon information and belief, Comcast substantively reviewed and
26 analyzed Entropic’s patents and patent applications related to the Entropic’s MoCA
27 standard patents as part of its due diligence prior to investing in Entropic.
28

1 76. Upon information and belief, the patents and patent applications that
2 Comcast analyzed prior to investing in Entropic include at least the following patents:
3 U.S. Patent No. 7,295,518 (the “’518 Patent”), duly issued on November 13, 2007
4 from an application filed December 18, 2002, an application filed August 19, 2002
5 and, *inter alia*, a provisional application filed August 30, 2001; U.S. Patent No.
6 7,594,249, duly issued on September 22, 2009 from an application filed July 21, 2001,
7 and a provisional application filed May 4, 2001; U.S. Patent No. 7,889,759 (the
8 “’759 Patent”), duly issued on February 15, 2011 from an application filed July 12,
9 2004, an application filed August 29, 2002, and, *inter alia* a provisional application
10 filed August 30, 2001; U.S. Patent No. 8,085,802, duly issued on December 27, 2011
11 from an application filed December 2, 2005, and a provisional application filed
12 December 2, 2004; U.S. Patent No. 8,631,450, duly issued on January 14, 2014, from
13 an application filed September 19, 2005 and, *inter alia*, a provisional application filed
14 December 2, 2004; U.S. Patent No. 8,621,539, duly issued on December 31, 2013
15 from an application filed September 29, 2005 and, *inter alia*, a provisional application
16 filed December 2, 2004; U.S. Patent No. 10,257,566, duly issued on April 9, 2019
17 from an application filed February 7, 2017, an application filed September 19, 2005,
18 and *inter alia*, a provisional application filed December 2, 2004 (collectively, the
19 “Pre-Investment MoCA Patents”). On information and belief, Comcast knew, based
20 on its own analysis and also potentially statements from Entropic itself, that these
21 patents were standard-essential to MoCA, such that practicing the MoCA standard
22 would infringe these patents.

23 77. Upon information and belief, no later than the day prior to its latest
24 investment in Entropic in 2006, Comcast knew or had every reason to know that
25 Entropic owned the Pre-Investment MoCA Patents related to the MoCA technology
26 such that deployment of MoCA standard-compliant devices would infringe patents
27 owned by Entropic.
28

1 78. Upon information and belief, no later than the day prior to its latest
2 investment in Entropic in 2006, any reasonable commercial party in Comcast's
3 position, with Comcast's knowledge, would know that deployment of MoCA
4 standard-compliant devices would infringe on the Pre-Investment MoCA Patents
5 owned by Entropic. On information and belief, Comcast continued to monitor and
6 analyze Entropic's MoCA-related patents and was aware of later-filed patents that are
7 standard-essential to MoCA simply due to the importance of MoCA to Comcast's
8 business and Comcast's later involvement as a board member of MoCA.

9 79. No later than 2010 and continuing to the present, Comcast has used
10 products that provide signals, programming and content utilizing a data connection
11 carried over a coaxial cable network in accordance with the MoCA standards,
12 including at least the Arris DCX3200, DCX3400, DCX3500, XG1-A, XG1v3,
13 XG1v4, XG2v2, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace
14 PXD01ANI, Samsung SR150BNM, and similarly operating devices. Because
15 Comcast was already aware of Entropic's Pre-Investment MoCA patents and knew
16 that those patents were standard-essential, Comcast knew that its use of these devices
17 would directly infringe the Pre-Investment MoCA patents. Despite this knowledge,
18 Comcast willfully infringed the Pre-Investment Patents beginning no later than 2010.

19 80. Upon information and belief, Comcast was involved with and/or a
20 member of MoCA from the earliest days of MoCA, through at least August 2019.
21 Indeed, Comcast was a member of the MoCA board of directors.⁶

22 81. Entropic filed a patent infringement suit against ViXS Systems, Inc. and
23 ViXS USA, Inc. in the Southern District of California, Case No.
24 13-CV-1102-WQHBGS ("the ViXS Suit"), on May 8, 2013, asserting infringement of
25 the '759 Patent and the '518 Patent. Both patents are essential to the standards
26 developed and promulgated by MoCA.

27
28 ⁶ See <https://mocalliance.org/about/faqs.php>.

1 82. Upon information and belief, as a member of MoCA, Comcast analyzed
2 the claims in the ViXS Suit and the asserted patents.

3 83. Upon information and belief, Comcast analyzed its products'
4 functionality in light of the patents asserted in the ViXS Suit.

5 84. Because Comcast already was using and deploying devices practicing the
6 MoCA standards (and continued to do so), Comcast willfully infringed the '759 and
7 '518 Patents no later than May 8, 2013, after substantively analyzing the complaint
8 and asserted patents from the ViXS suit.

9 85. As a member of MoCA, Comcast was well aware that Entropic, the
10 owner of the MoCA Patents in the ViXS Suit, was the leading contributor of
11 technology to the standards promulgated by MoCA, which are implicated by the
12 claims of patent infringement in the ViXS Suit.

13 86. Upon information and belief, Comcast therefore knew that MaxLinear
14 and Entropic Communications Inc. were significant players in MoCA.

15 87. Upon information and belief, Comcast knew that MoCA had tremendous
16 success, given its public success through Verizon Wireless's deployment of Fios.

17 88. Upon information and belief, Comcast knew that MaxLinear, Inc. was a
18 member of MoCA since at least 2011.

19 89. Comcast and MaxLinear, Inc. were both board members of MoCA from
20 at least 2015 through August 2019. By virtue of Comcast's participation in MoCA and
21 its ongoing, extensive use of MoCA standards, on information and belief, Comcast
22 monitored the publication and issuance of patents that would be standard-essential,
23 including MaxLinear and Entropic Communications Inc. patents. Because Comcast
24 was using devices that practiced the MoCA standards, Comcast willfully infringed
25 each MaxLinear and Entropic Communications Inc. patent that was standard-essential
26 to MoCA no later than shortly after the issuance of those patents. To the extent
27 Comcast did not engage in such review, it constitutes willful blindness to patent
28

1 infringement due to Comcast's knowledge of the foundational role and contributions
2 of Entropic Communications Inc. and MaxLinear to the MoCA standards.

3 90. Upon information and belief, Comcast was aware that Entropic
4 Communications Inc. owned patents that were and are essential to the practice of the
5 MoCA standard.⁷

6 91. At least as early as January 1, 2020, Comcast knew that MaxLinear
7 owned patents that were essential to practicing the technology embodied in one or
8 more standards promulgated by MoCA.

9 92. Comcast knew that MaxLinear acquired Entropic Communications Inc.
10 and its patents in 2015.⁸ Because Comcast already knew it was willfully infringing
11 patents owned by Entropic Communications Inc., Comcast therefore knew that it was
12 willfully infringing patents that were standard-essential to MoCA that now were
13 owned by MaxLinear no later than 2015.

14 93. No later than the day prior to [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]

18 94. No later than the day prior to [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]

22 Despite this knowledge, Comcast continued to use and
23 deploy devices practicing the MoCA standards and therefore willfully infringing
24 patents owned by MaxLinear, including at least

25 ⁷See

26 <https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm>.

27 ⁸ See https://investors.maxlinear.com/annual-reports?form_type=10-K&year=.

1 95. Accordingly, Comcast either knew about the MoCA Patents, or
2 alternatively engaged in a scheme to be willfully blind to the existence of such
3 Patents, as set forth in the concurrently filed *Entropic Communications, Inc. v.*
4 *Comcast Corporation, et al.*, No. 2:23-cv-1048-JWH-KES (C.D. Cal. 2023). Comcast
5 therefore willfully infringed at least the Pre-Investment MoCA Patents, later-issued
6 MoCA patents, and the patents asserted in the ViXS case no later than the day prior to

7 [REDACTED]

8 **2. Comcast Willfully Infringed, and Continues to Infringe, Entropic's**
9 **Patents-in-Suit**

10 96. Upon information and belief, Comcast substantively reviewed and
11 analyzed the '775 Patent-in-Suit, duly issued on July 17, 2012 from an application
12 filed September 30, 2003, as part of its due diligence prior to investing in Entropic in
13 2006.

14 97. Accordingly, upon information and belief, no later than the day prior to
15 its latest investment in Entropic in 2006, Comcast knew or had every reason to know
16 that Entropic owned the '775 Patent-in-Suit. Because Comcast knew of the '775
17 patent and substantively reviewed its claims, Comcast began willfully infringing the
18 '775 patent no later than the dates it began offering the Accused Cable Modem
19 products and services, having knowledge that such use and deployment infringed the
20 '775 patent.

21 98. Additionally, Comcast and MaxLinear, Inc. were engaged in a
22 longstanding commercial relationship for years.

23 99. [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED]
28 [REDACTED]

1 100. [REDACTED]
2 [REDACTED]
3 [REDACTED]

4 related to non-standardized technologies deployed in the cable television and/or cable
5 internet businesses, technologies that Comcast uses and deploys.

6 101. As addressed above in paragraphs 67 through 74, Comcast has willfully
7 infringed at least the '362 patent, the '826 patent, and the '206 patent through its
8 knowledge gained from the Charter litigation, and was aware of (and substantively
9 analyzed its infringement of) the other Patents-in-Suit no later than the letter sent by
10 Entropic in August 2022.

11 102. Accordingly, Comcast either knew about the Patents-in-Suit, or
12 alternatively engaged in a scheme to be willfully blind to the existence of the
13 Patents-in-Suit.

14 103. Upon information and belief, in addition to the knowledge as set forth
15 above, one of the named inventors of the '008 Patent and '826 Patent, Patrick Tierney,
16 now works at Comcast. Accordingly, upon information and belief, Comcast knew of
17 the aforementioned Patents-in-Suit as early as the day Patrick Tierney was hired.

18 104. To date, Comcast has continued its wrongful and willful use of the
19 Patents-in-Suit, and has further continued its attempts to shield itself from liability for
20 its wrongful use thereof.

21 **JURISDICTION AND VENUE**

22 105. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331
23 and 1338(a) because the claims herein arise under the patent laws of the United States,
24 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271.

25 106. Venue in this District is proper pursuant to 28 U.S.C. § 1400(b), because
26 Comcast has regular and established places of business in this District. The
27 defendants, by themselves and/or through their agents, have committed acts of patent
28 infringement within the State of California and within this District by using, selling,

1 offering for sale, and/or leasing various telecommunication services products and
2 services.

3 107. This Court has general personal jurisdiction over Comcast Corp. because
4 it conducts systematic and regular business within the State of California by, *inter alia*
5 providing cable television, internet, and phone services to businesses and residents
6 throughout the state. Comcast Corp.'s website states that, "Comcast is deeply
7 committed to California, where our nearly 5,000 employees serve more than 3 million
8 customers throughout the state."⁹

9 108. Upon information and belief, Comcast Management has a regular and
10 established place of business in the State of California including at least at 3055
11 Comcast Place, Livermore, California 94551.

12 109. The Court has personal jurisdiction over Comcast Corp., Comcast
13 Communications and Comcast Management because they have committed acts of
14 infringement within the State of California and within this District through, for
15 example, providing through their wholly owned subsidiaries, "Comcast" and
16 "Xfinity" branded products and services, including, Xfinity set top boxes ("STBs")
17 and Xfinity digital video, audio, and other content services to customers. Comcast
18 provides cable television and internet services ("Accused Services") via the lease,
19 sale, and/or distribution of cable modems and set top boxes both online and from
20 Comcast stores in this District. For example, Comcast has and continues to sell, lease,
21 and/or distribute the Technicolor TC8717 cable modem, Technicolor CGM4140 cable
22 modem, Technicolor CGM4331 cable modem, and products that operate in a similar
23 manner ("Accused Cable Modem Products"), as well as the Arris AX013ANC STB,
24 Arris AX013ANM STB, Arris AX014ANC STB, Arris AX014ANM STB, Arris
25 MX011ANC STB, Arris MX011ANM STB, Pace PX001ANC STB, Pace

26 ⁹ See

27 <https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20com>
28 [mitted%20to,smart%20home%E2%80%9D%20and%20phone%20service.](https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20com)

1 PX013ANC STB, Pace PX013ANM STB, Pace PX022ANC STB, Pace PX022ANM
2 STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that
3 operate in a similar manner (“Accused Set Top Products”).¹⁰

4 110. Upon information and belief, Comcast Corp., Comcast Communications,
5 and Comcast Management, by themselves and/or through their agents, offer various
6 telecommunication services throughout the United States. Comcast operates and
7 maintains a nationwide television and data network through which it sells, leases, and
8 offers for sale products and services, including the Accused Services, Accused Cable
9 Modem Products and Accused Set Top Products, to businesses, consumers, and
10 government agencies. Through its subsidiaries, Comcast Corp. offers to sell, sells, and
11 provides “Comcast” and “Xfinity” branded products and services, including cable
12 modems, set top boxes, and digital video, audio, and other content services to
13 customers. Subscribers to Comcast’s television services receive one or more receivers
14 and/or set-top boxes within this District. Subscribers to Comcast’s internet services
15 receive one or more cable modems within this District.

16 111. Upon information and belief, those services are provided through and
17 using the Accused Cable Modem Products and Accused Set Top Products.

18 112. Upon information and belief, Comcast Corp., Comcast Communications,
19 and Comcast Management, by themselves and/or through their agents, Comcast Santa
20 Maria and/or Comcast Lompoc, operate their businesses through *inter alia* offices,
21 warehouses, storefronts, and/or other operational locations within this District,
22 including, for example, at the Xfinity by Comcast stores located in this District at 685
23 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite B,

24 ¹⁰ Entropic provided its initial infringement contentions for the ’775, ’690, ’008, ’362,
25 ’826, ’682, ’866, and ’206 Patents on September 15, 2023. Entropic provided its
26 initial infringement contentions for the ’438 and ’275 Patents on November 3, 2023.
27 Entropic has revised this Second Amended Complaint to reflect the initial
28 infringement contentions, which include references to certain documents provided in
discovery to Comcast by Entropic.

1 Lompoc, California 93436. Comcast holds out these locations as its own through the
2 use of branding on the locations themselves.

3 113. Comcast lists these Xfinity by Comcast stores on its website and holds
4 them out as places where customers can obtain the Accused Services, Accused Cable
5 Modem Products and Accused Set Top Products.

6 114. Upon information and belief, one or more of the defendants owns and/or
7 leases the premises where these Xfinity by Comcast stores are located.

8 115. Upon information and belief, these Xfinity by Comcast stores are staffed
9 by persons directly employed by Comcast, many of whom live in this District.

10 116. Upon information and belief, one or more of the defendants has engaged
11 in regular and established business at physical places within this District such as at
12 these two Xfinity by Comcast stores.

13 117. Upon information and belief, Comcast employs and/or contracts with
14 persons and directs them to install, service, repair, and/or replace equipment, as
15 appropriate, in this District.

16 118. Upon information and belief, in each of these stores and/or service
17 centers, Comcast owns and stores equipment such as cable modems and set top boxes
18 and demonstrates services provided via those products to Comcast customers.

19 119. Comcast has adopted and ratified the Comcast and Xfinity-branded
20 locations identified in this District. The Comcast website advertises Comcast service
21 packages available from Comcast-authorized retailers in this District, and prospective
22 employees can find Comcast job listings in this District. Furthermore, the “corporate”
23 section of Comcast’s main website has a section containing “Special Information
24 Regarding California Residents’ Privacy Rights,” which demonstrates that Comcast is
25 purposefully holding itself out as providing products and services in California.

26 120. Upon information and belief, Comcast Corp., and/or Comcast
27 Communications, by themselves and/or through their agent, Comcast Management,
28 provides the Accused Services throughout the United States and in this District.

1 121. Upon information and belief, Comcast Corp. and/or Comcast
2 Management, by themselves, and/or through their agent, Comcast Communications,
3 sells, and offers for sale, and provides the Accused Services, the Accused Cable
4 Modem Products and the Accused Set Top Products throughout the United States and
5 in this District.

6 122. The Accused Services are available for subscription from various
7 physical stores, including those at 685 East Betteravia Rd., Santa Maria, California,
8 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

9 123. The devices, including the Accused Cable Modem Products and the
10 Accused Set Top Products provided by Comcast to supply the Accused Services, are
11 provided to customers in this District and may be obtained by customers from
12 physical locations in this District, including those at 685 East Betteravia Rd., Santa
13 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

14 124. Venue is further proper because Comcast has committed and continues to
15 commit acts of patent infringement in this District, including making, using, offering
16 to sell, and/or selling Accused Services, Accused Cable Modem Products and
17 Accused Set Top Products in this District, and/or importing the Accused Cable
18 Modem Products and Accused Set Top Products into, and thereafter providing
19 Accused Services in, this District, including by Internet sales and sales via retail and
20 wholesale stores. Furthermore, for example, Comcast deploys Accused Cable Modem
21 Products and Accused Set Top Products to many thousands of locations (e.g.,
22 customer premises) in this District and subsequently, by means of those
23 instrumentalities, uses the claimed inventions at those locations in this District.
24 Comcast infringes by inducing and contributing to acts of patent infringement in this
25 District and/or committing at least a portion of any other infringement alleged herein
26 in this District.

27 125. Comcast continues to conduct business in this District, including the acts
28 and activities described in the preceding paragraph.

COUNT I

(Infringement of the '775 Patent)

126. Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

127. Entropic served infringement contentions which included a claim chart for the '775 Patent on September 15, 2023.

128. ~~127.~~ The '775 Patent duly issued on July 17, 2012 from an application filed September 30, 2003.

129. ~~128.~~ Entropic owns all substantial rights, interest, and title in and to the '775 Patent, including the sole and exclusive right to prosecute this action and enforce the '775 Patent against infringers and to collect damages for all relevant times.

130. ~~129.~~ The '775 Patent generally describes a partitioned cable modem that performs cable modem functions and data and home networking functions. Functionally partitioning a cable modem to perform cable modem functions and data and home networking functions enables a cable modem to incorporate a variety of enhanced functions. A true and accurate copy of the '775 Patent is attached hereto as Exhibit 1.

131. ~~130.~~ The '775 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

132. ~~131.~~ The '775 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

133. ~~132.~~ Comcast deploys one or more of the Accused Cable Modem Products in connection with operating and providing the Accused Services.

134. ~~133.~~ The Accused Cable Modem Products deployed by Comcast to customer premises remain the property of Comcast while deployed.

135. ~~134.~~ The Accused Cable Modem Products operate while deployed in a manner controlled and intended by Comcast.

1 136. ~~135.~~ As set forth in the attached nonlimiting claim chart (Exhibit 2),
2 Comcast has directly infringed and is infringing at least Claims 18 and 19 of the '775
3 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem
4 Products and/or the Accused Services.

5 137. ~~136.~~ Each aspect of the functioning of the Accused Cable Modem
6 Products described in the claim chart operates while deployed to customer premises in
7 a manner controlled and intended by Comcast.

8 138. ~~137.~~ Comcast provides no software, support, or other facility to
9 customers to modify any aspect of the functioning described in the claim chart of the
10 Accused Cable Modem Products while deployed to customer premises.

11 139. ~~138.~~ Comcast directly infringes at least Claims 18 and 19 of the '775
12 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem
13 Products (for example, the Technicolor CGM4140 cable modem) and/or the Accused
14 Services (for example, utilizing cable modem functions).

15 140. ~~139.~~ The use of the Accused Cable Modem Products by Comcast to, for
16 example, demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd.,
17 Santa Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California
18 93436, or to, for example, test those products, constitute acts of direct infringement of
19 at least Claims 18 and 19 of the '775 Patent.

20 141. ~~140.~~ Comcast has known of or has been willfully blind to the '775 Patent
21 since no later than the day before signing the [REDACTED]

22 142. ~~141.~~ Comcast has known of or has been willfully blind to the '775 Patent
23 since no later than the day before investing in Entropic in or about 2006.

24 143. ~~142.~~ Comcast has known of the '775 Patent no later than its receipt of
25 Entropic's communication sent to Comcast on August 9, 2022.

26 144. ~~143.~~ Comcast has been aware that it infringes the '775 Patent since well
27 before, and no later than the date of, its receipt of Entropic's August 9, 2022
28

1 communication, attached as Exhibit 17. Since obtaining knowledge of the '775 Patent
2 and its infringing activities, Comcast has failed to cease its infringing activities.

3 145. ~~144.~~ Customers and subscribers of Comcast infringe at least Claims 18
4 and 19 of the '775 Patent by using the claimed system, at least during the use of the
5 Accused Cable Modem Products ~~(for example, the Technicolor CGM4140 cable~~
6 ~~modem).~~

7 146. ~~145.~~ Comcast actively induces customers' direct infringement. For
8 example, Comcast actively induces infringement of at least Claims 18 and 19 of the
9 '775 Patent by providing the Accused Cable Modem Products to Comcast customers
10 with specific instructions and/or assistance (including installation) regarding the use
11 of the Accused Cable Modem Products to infringe the '775 Patent in accordance with
12 the ordinary course of operation through the provision of the Accused Services. For at
13 least the above-listed reasons, Comcast aids, instructs, supports, and otherwise acts
14 with the intent to cause an end user to use the Accused Cable Modem Products to
15 infringe at least Claims 18 and 19 of the '775 Patent.

16 147. ~~146.~~ Comcast contributes to the customers' direct infringement. Comcast
17 provides apparatuses, namely the Accused Cable Modem Products, that are used by
18 customers to directly infringe at least Claims 18 and 19 of the '775 Patent.

19 148. ~~147.~~ The Accused Cable Modem Products have no substantial
20 noninfringing uses. When an end user uses the Accused Cable Modem Products to
21 receive the Accused Services, the end user directly infringes at least Claims 18 and 19
22 of the '775 Patent. The Accused Cable Modem Products are especially made or
23 especially adapted for use in an infringing manner.

24 149. ~~148.~~ Comcast's inducement of, and contribution to, the direct
25 infringement of at least Claims 18 and 19 of the '775 Patent is continuous and
26 ongoing through acts such as providing the Accused Cable Modem Products to
27 Comcast customers, which enables those customers to receive the Accused Services;
28 Comcast's provision of the Accused Services; and technical assistance provided by

1 Comcast for equipment it provides to its customers in support of the provision of the
2 Accused Services.

3 150. ~~149.~~ Comcast's infringement of the '775 Patent is, has been, and
4 continues to be willful, intentional, deliberate, and/or in conscious disregard for
5 Entropic's rights under the patent.

6 151. ~~150.~~ Entropic has been damaged as a result of the infringing conduct
7 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic
8 for Comcast's infringement, which by law cannot be less than a reasonable royalty,
9 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

10 152. ~~151.~~ Entropic is aware of no obligation to mark any instrumentality with
11 the '775 Patent in accordance with 35 U.S.C. § 287.

12 COUNT II

13 (Infringement of the '690 Patent)

14 153. ~~152.~~ Entropic incorporates by reference each allegation above as if fully
15 set forth herein.

16 154. Entropic served infringement contentions which included a claim chart
17 for the '690 Patent on September 15, 2023.

18 155. ~~153.~~ The '690 Patent duly issued on October 9, 2012 from an application
19 filed December 10, 2009, and, *inter alia* a provisional application filed May 19, 2009
20 and a provisional application filed December 15, 2008.

21 156. ~~154.~~ Entropic owns all substantial rights, interest, and title in and to the
22 '690 Patent, including the sole and exclusive right to prosecute this action and enforce
23 the '690 Patent against infringers and to collect damages for all relevant times.

24 157. ~~155.~~ The '690 Patent generally describes the process of generating probe
25 transmissions in response to a request from a receiving node of a network, wherein the
26 probe request specifies a plurality of parameters that specify content payload of the
27 probe transmission, and a second node to receive the probe transmission, which
28 enhances flexibility and therefore, improves the receiving node's ability to efficiently

1 recognize the precise form of the transmitted probe. A true and accurate copy of the
2 '690 Patent is attached hereto as Exhibit 3.

3 158. ~~156.~~ The '690 Patent is directed to patent-eligible subject matter pursuant
4 to 35 U.S.C. § 101.

5 159. ~~157.~~ The '690 Patent is valid and enforceable, and presumed as such,
6 pursuant to 35 U.S.C. § 282.

7 160. ~~158.~~ Comcast deploys one or more of the Accused Cable Modem
8 Products in connection with operating and providing the Accused Services.

9 161. ~~159.~~ The Accused Cable Modem Products deployed by Comcast to
10 customer premises remain the property of Comcast while deployed.

11 162. ~~160.~~ The Accused Cable Modem Products operate while deployed in a
12 manner controlled and intended by Comcast.

13 163. ~~161.~~ As set forth in the attached nonlimiting claim chart (Exhibit 4),
14 Comcast has directly infringed and is infringing at least Claims 7, and 8, ~~11, 15, and~~
15 ~~16~~ of the '690 Patent by using, importing, selling, and/or offering for sale the
16 Accused Cable Modem Products and/or the Accused Services.

17 164. ~~162.~~ Each aspect of the functioning of the Accused Cable Modem
18 Products described in the claim chart operates while deployed to customer premises in
19 a manner controlled and intended by Comcast.

20 165. ~~163.~~ Comcast provides no software, support, or other facility to
21 customers to modify any aspect of the functioning described in the claim chart of the
22 Accused Cable Modem Products while deployed to customer premises.

23 166. ~~164.~~ Comcast directly infringes at least Claims 7, and 8, ~~11, 15, and 16~~
24 of the '690 Patent by using, importing, selling, and/or offering for sale the Accused
25 Cable Modem Products (for example, the Technicolor CGM4140 cable modem)
26 and/or the Accused Services (for example, performing bidirectional communication
27 with cable modems).

1 167. ~~165.~~ The use of the Accused Services by Comcast to, for example,
2 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa
3 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,
4 or to, for example, test those products, constitute acts of direct infringement of at least
5 Claims 7, and 8, ~~11, 15, and 16~~ of the '690 Patent.

6 168. ~~166.~~ Comcast has known of or has been willfully blind to the '690 Patent
7 no later than the day before signing the [REDACTED].

8 169. ~~167.~~ Comcast has known of or has been willfully blind to the '690 Patent
9 since no later than the date of its receipt of Entropic's communication sent to Comcast
10 on August 9, 2022.

11 170. ~~168.~~ Comcast has been aware that it infringes the '690 Patent since well
12 before, and no later than the date of, Entropic's August 9, 2022 communication,
13 attached as Exhibit 17. Since obtaining knowledge of the '690 Patent and its
14 infringing activities, Comcast has failed to cease its infringing activities.

15 171. ~~169.~~ Customers and subscribers of Comcast infringe at least Claims 7
16 and 8 of the '690 Patent by using the claimed method, at least during receipt of the
17 Accused Services utilizing, for example, the Accused Cable Modem Products ~~(for~~
18 ~~example, the Technicolor CGM4140 cable modem).~~

19 172. ~~170.~~ Comcast actively induces customers' direct infringement. For
20 example, Comcast actively induces infringement of at least Claims 7 and 8 of the '690
21 Patent by providing the Accused Cable Modem Products to Comcast customers with
22 specific instructions and/or assistance (including installation) regarding the use of the
23 Accused Cable Modem Products to infringe the '690 Patent in accordance with the
24 ordinary course of operation through the provision of the Accused Services. Comcast
25 provides the cable modem functions claimed by the '690 Patent via the Accused
26 Services, which enable and induce its customers to directly infringe the '690 Patent.
27 For at least the above-listed reasons, Comcast aids, instructs, supports, and otherwise
28

1 acts with the intent to cause an end user to use the Accused Cable Modem Products to
2 infringe at least Claims 7 and 8 of the '690 Patent.

3 173. ~~171.~~ Comcast contributes to the customers' direct infringement. Comcast
4 provides apparatuses, namely the Accused Cable Modem Products, that are used by
5 customers to directly infringe at least Claims 7 and 8 of the '690 Patent.

6 174. ~~172.~~ The Accused Cable Modem Products have no substantial
7 noninfringing uses. When an end user uses the Accused Cable Modem Products to
8 receive the Accused Services, the end user directly infringes at least Claims 7 and 8 of
9 the '690 Patent. The Accused Cable Modem Products are especially made or
10 especially adapted for use in an infringing manner.

11 175. ~~173.~~ Comcast's inducement of, and contribution to, the direct
12 infringement of at least Claims 7 and 8 of the '690 Patent is continuous and ongoing
13 through acts such as providing the Accused Cable Modem Products to Comcast
14 customers, which enables those customers to receive the Accused Services; Comcast's
15 provision of the Accused Services; and technical assistance provided by Comcast for
16 equipment it provides to its customers in support of the provision of the Accused
17 Services.

18 176. ~~174.~~ Comcast's infringement of the '690 Patent is, has been, and
19 continues to be willful, intentional, deliberate, and/or in conscious disregard for
20 Entropic's rights under the patent.

21 177. ~~175.~~ Entropic has been damaged as a result of the infringing conduct
22 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic
23 for Comcast's infringement, which by law cannot be less than a reasonable royalty,
24 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

25 178. ~~176.~~ No apparatus claims of the '690 Patent are presently asserted.
26 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

27 **COUNT III**

28 **(Infringement of the '008 Patent)**

1 179. ~~177.~~ Entropic incorporates by reference each allegation of the paragraphs
2 above as if fully set forth herein.

3 180. Entropic served infringement contentions which included a claim chart
4 for the '008 Patent on September 15, 2023.

5 181. ~~178.~~ The '008 Patent duly issued on July 29, 2014 from an application
6 filed September 10, 2012, and, *inter alia* a provisional application filed September 8,
7 2011.

8 182. ~~179.~~ Entropic owns all substantial rights, interest, and title in and to the
9 '008 Patent, including the sole and exclusive right to prosecute this action and enforce
10 the '008 Patent against infringers and to collect damages for all relevant times.

11 183. ~~180.~~ The '008 Patent generally describes a system that receives a signal
12 having a plurality of channels, digitizes the received signal, and reports certain signal
13 characteristics to the source of the received signal. A true and accurate copy of the
14 '008 Patent is attached hereto as Exhibit 5.

15 184. ~~181.~~ The '008 Patent is directed to patent-eligible subject matter pursuant
16 to 35 U.S.C. § 101.

17 185. ~~182.~~ The '008 Patent is valid and enforceable, and presumed as such,
18 pursuant to 35 U.S.C. § 282.

19 186. ~~183.~~ Comcast deploys one or more of the Accused Cable Modem
20 Products and Accused Set Top Products in connection with operating and providing
21 the Accused Services.

22 187. ~~184.~~ The Accused Cable Modem Products and Accused Set Top Products
23 deployed by Comcast to customer premises remain the property of Comcast while
24 deployed.

25 188. ~~185.~~ The Accused Cable Modem Products and Accused Set Top Products
26 operate while deployed in a manner controlled and intended by Comcast.

27 189. ~~186.~~ As set forth in the attached nonlimiting claim chart (Exhibit 6),
28 Comcast has directly infringed and is infringing at least Claims ~~1~~1-6, 9, and ~~2~~10 of the

'008 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem Products and Accused Set Top Products and/or the Accused Services.

190. ~~187.~~ Each aspect of the functioning of the Accused Cable Modem Products and Accused Set Top Products described in the claim chart operates while deployed to customer premises in a manner controlled and intended by Comcast.

191. ~~188.~~ Comcast provides no software, support, or other facility to customers to modify any aspect of the functioning described in the claim chart of the Accused Cable Modem Products and Accused Set Top Products while deployed to customer premises.

192. ~~189.~~ Comcast directly infringes at least Claims ~~1~~1-6, 9, and ~~2~~10 of the '008 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem Products (for example, the Technicolor CGM4140 cable modem), Accused Set Top Products (for example, the Arris AX013ANM STB) and/or the Accused Services (for example, monitoring signals by the Accused Set Top Products).

193. ~~190.~~ The use of the Accused Cable Modem Products and Accused Set Top Products by Comcast to, for example, demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436, or to, for example, test those products, constitute acts of direct infringement of at least Claims ~~1~~1-6, 9, and ~~2~~10 of the '008 Patent.

194. ~~191.~~ Comcast has known of or has been willfully blind to the '008 Patent no later than the day before [REDACTED]

195. ~~192.~~ Comcast has known of or has been willfully blind to the '008 Patent since before the August 9, 2022 communication from Entropic.

196. ~~193.~~ Comcast has been aware that it infringes the '008 Patent since well before, and no later than the date of, Entropic's August 9, 2022 communication, attached as Exhibit 17. Since obtaining knowledge of the '008 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

1 197. ~~194.~~ Customers and subscribers of Comcast infringe at least Claims ~~1~~1-6,
2 9, and ~~2~~10 of the '008 Patent by using the claimed system, at least during the use of
3 the Accused Cable Modem Products and Accused Set Top Products ~~(for example, the~~
4 ~~Arris AX013ANM STB).~~

5 198. ~~195.~~ Comcast actively induces customers' direct infringement. For
6 example, Comcast actively induces infringement of at least Claims ~~1~~1-6, 9, and ~~2~~10 of
7 the '008 Patent by providing the Accused Cable Modem Products and Accused Set
8 Top Products to Comcast customers with specific instructions and/or assistance
9 (including installation) regarding the use of the Accused Cable Modem Products and
10 Accused Set Top Products to infringe the '008 Patent in accordance with the ordinary
11 course of operation through the provision of the Accused Services. Comcast provides
12 the full band digital tuning and signal monitoring functions claimed by the '008 Patent
13 via the Accused Services, which enable and induce its customers to directly infringe
14 the '008 Patent. For at least the above-listed reasons, Comcast aids, instructs,
15 supports, and otherwise acts with the intent to cause an end user to use the Accused
16 Cable Modem Products and Accused Set Top Products to infringe at least Claims
17 ~~1~~1-6, 9, and ~~2~~10 of the '008 Patent.

18 199. ~~196.~~ Comcast contributes to the customers' direct infringement. Comcast
19 provides apparatuses, namely the Accused Cable Modem Products and Accused Set
20 Top Products, that are used by customers to directly infringe at least Claims ~~1~~1-6, 9,
21 and ~~2~~10 of the '008 Patent.

22 200. ~~197.~~ The Accused Cable Modem Products and Accused Set Top Products
23 have no substantial noninfringing uses. When an end user uses the Accused Cable
24 Modem Products and Accused Set Top Products to receive the Accused Services, the
25 end user directly infringes at least Claims ~~1~~1-6, 9, and ~~2~~10 of the '008 Patent. The
26 Accused Cable Modem Products and Accused Set Top Products are especially made
27 or especially adapted for use in an infringing manner.

201. ~~198.~~ Comcast's inducement of, and contribution to, the direct infringement of at least Claims ~~1~~1-6, 9, and ~~2~~10 of the '008 Patent is continuous and ongoing through acts such as providing the Accused Cable Modem Products and Accused Set Top Products to Comcast customers, which enables those customers to receive the Accused Services; Comcast's provision of the Accused Services; and technical assistance provided by Comcast for equipment it provides to its customers in support of the provision of the Accused Services.

202. ~~199.~~ Comcast's infringement of the '008 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

203. ~~200.~~ Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

204. ~~201.~~ Entropic is aware of no obligation to mark any instrumentality with the '008 Patent in accordance with 35 U.S.C. § 287.

COUNT IV

(Infringement of the '362 Patent)

205. ~~202.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

206. Entropic served infringement contentions which included a claim chart
for the '362 Patent on September 15, 2023.

207. ~~203.~~—The '362 Patent duly issued on December 8, 2015 from an application filed February 5, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

208. ~~204.~~ Entropic owns all substantial rights, interest, and title in and to the '362 Patent, including the sole and exclusive right to prosecute this action and enforce the '362 Patent against infringers and to collect damages for all relevant times.

1 209. ~~205.~~ The '362 Patent generally describes a wideband receiver system that
2 down converts a plurality of frequencies including desired television channels and
3 undesired television channels, digitizes frequencies, selects desired television
4 channels from the frequencies, and outputs the selected television channels to a
5 demodulator as a digital data stream. A true and accurate copy of the '362 Patent is
6 attached hereto as Exhibit 7.

7 210. ~~206.~~ The '362 Patent is directed to patent-eligible subject matter pursuant
8 to 35 U.S.C. § 101.

9 211. ~~207.~~ The '362 Patent is valid and enforceable, and presumed as such,
10 pursuant to 35 U.S.C. § 282.

11 212. ~~208.~~ Comcast deploys one or more of the Accused Set Top Products in
12 connection with operating and providing the Accused Services.

13 213. ~~209.~~ The Accused Set Top Products deployed by Comcast to customer
14 premises remain the property of Comcast while deployed.

15 214. ~~210.~~ The Accused Set Top Products operate while deployed in a manner
16 controlled and intended by Comcast.

17 215. ~~211.~~ As set forth in the attached nonlimiting claim chart (Exhibit 8),
18 Comcast has directly infringed and is infringing at least ~~Claim~~Claims 11 and 12 of the
19 '362 Patent by using, importing, selling, and/or offering for sale the Accused Set Top
20 Products and/or the Accused Services.

21 216. ~~212.~~ Each aspect of the functioning of the Accused Set Top Products
22 described in the claim chart operates while deployed to customer premises in a
23 manner controlled and intended by Comcast.

24 217. ~~213.~~ Comcast provides no software, support, or other facility to
25 customers to modify any aspect of the functioning described in the claim chart of the
26 Accused Set Top Products while deployed to customer premises.

27 218. ~~214.~~ Comcast directly infringes at least ~~Claim~~Claims 11 and 12 of the
28 '362 Patent by using, importing, selling, and/or offering for sale the Accused Set Top

1 Products (for example, the Arris AX013ANM STB) and/or the Accused Services (for
2 example, digitizing and selecting desired television channels provided by Comcast).

3 219. ~~215.~~ The use of the Accused Set Top Products by Comcast to, for
4 example, demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd.,
5 Santa Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California
6 93436, or to, for example, test those products, constitute acts of direct infringement of
7 at least ~~Claim~~Claims 11 and 12 of the '362 Patent.

8 220. ~~216.~~ Comcast has known of or has been willfully blind to the '362 Patent
9 no later than the day before [REDACTED]

10 221. ~~217.~~ Comcast has known of or has been willfully blind to the '362 Patent
11 since before the August 9, 2022 communication from Entropic.

12 222. ~~218.~~ Comcast has been aware that it infringes the '362 Patent since well
13 before, and no later than the date of, its receipt of Entropic's August 9, 2022
14 communication, attached as Exhibit 17. Since obtaining knowledge of the '362 Patent
15 and its infringing activities, Comcast has failed to cease its infringing activities.

16 223. ~~219.~~ Customers and subscribers of Comcast infringe at least ~~Claim~~Claims
17 11 and 12 of the '362 Patent by using the claimed system, at least during the use of
18 the Accused Set Top Products ~~(for example, the Arris AX013ANM STB).~~

19 224. ~~220.~~ Comcast actively induces customers' direct infringement. For
20 example, Comcast actively induces infringement of at least ~~Claim~~Claims 11 and 12 of
21 the '362 Patent by providing the Accused Set Top Products to Comcast customers
22 with specific instructions and/or assistance (including installation) regarding the use
23 of the Accused Set Top Products to infringe the '362 Patent in accordance with the
24 ordinary course of operation through the provision of the Accused Services. Comcast
25 provides the television channel digitization, selection, and output functions claimed by
26 the '362 Patent via the Accused Services, which enable and induce its customers to
27 directly infringe the '362 Patent. For at least the above-listed reasons, Comcast aids,
28 instructs, supports, and otherwise acts with the intent to cause an end user to use the

1 Accused Set Top Products to infringe at least ~~Claim~~Claims 11 and 12 of the '362
2 Patent.

3 225. ~~221.~~ Comcast contributes to the customers' direct infringement. Comcast
4 provides apparatuses, namely the Accused Set Top Products, that are used by
5 customers to directly infringe at least ~~Claim~~Claims 11 and 12 of the '362 Patent.

6 226. ~~222.~~ The Accused Set Top Products have no substantial noninfringing
7 uses. When an end user uses the Accused Set Top Products to receive the Accused
8 Services, the end user directly infringes at least ~~Claim~~Claims 11 and 12 of the '362
9 Patent. The Accused Set Top Products are especially made or especially adapted for
10 use in an infringing manner.

11 227. ~~223.~~ Comcast's inducement of, and contribution to, the direct
12 infringement of at least ~~Claim~~Claims 11 and 12 of the '362 Patent is continuous and
13 ongoing through acts such as providing the Accused Set Top Products to Comcast
14 customers, which enables those customers to receive the Accused Services; Comcast's
15 provision of the Accused Services; and technical assistance provided by Comcast for
16 equipment it provides to its customers in support of the provision of the Accused
17 Services.

18 228. ~~224.~~ Comcast's infringement of the '362 Patent is, has been, and
19 continues to be willful, intentional, deliberate, and/or in conscious disregard for
20 Entropic's rights under the patent.

21 229. ~~225.~~ Entropic has been damaged as a result of the infringing conduct
22 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic
23 for Comcast's infringement, which by law cannot be less than a reasonable royalty,
24 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

25 230. ~~226.~~ No apparatus claims of the '362 Patent are presently asserted.
26 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

27 **COUNT V**

28 **(Infringement of the '826 Patent)**

1 231. ~~227.~~ Entropic incorporates by reference each allegation of the paragraphs
2 above as if fully set forth herein.

3 232. Entropic served infringement contentions which included a claim chart
4 for the '826 Patent on September 15, 2023.

5 233. ~~228.~~ The '826 Patent duly issued on November 21, 2017 from an
6 application filed November 23, 2015, an application filed July 28, 2014, an
7 application filed September 10, 2012, and, *inter alia* a provisional application filed
8 September 8, 2011.

9 234. ~~229.~~ Entropic owns all substantial rights, interest, and title in and to the
10 '826 Patent, including the sole and exclusive right to prosecute this action and enforce
11 the '826 Patent against infringers and to collect damages for all relevant times.

12 235. ~~230.~~ The '826 Patent generally describes a system that receives a signal
13 having a plurality of channels, digitizes the received signal, and reports certain signal
14 characteristics to the source of the received signal. A true and accurate copy of the
15 '826 Patent is attached hereto as Exhibit 9.

16 236. ~~231.~~ The '826 Patent is directed to patent-eligible subject matter pursuant
17 to 35 U.S.C. § 101.

18 237. ~~232.~~ The '826 Patent is valid and enforceable, and presumed as such,
19 pursuant to 35 U.S.C. § 282.

20 238. ~~233.~~ Comcast deploys one or more of the Accused Cable Modem
21 Products and Accused Set Top Products in connection with operating and providing
22 the Accused Services.

23 239. ~~234.~~ The Accused Cable Modem Products and Accused Set Top Products
24 deployed by Comcast to customer premises remain the property of Comcast while
25 deployed.

26 240. ~~235.~~ The Accused Cable Modem Products and Accused Set Top Products
27 operate while deployed in a manner controlled and intended by Comcast.

1 241. ~~236.~~ As set forth in the attached nonlimiting claim chart (Exhibit 10),
2 Comcast has directly infringed and is infringing at least ~~Claim 1~~ Claims 1-4, 6, 8, and
3 9 of the '826 Patent by using, importing, selling, and/or offering for sale the Accused
4 Cable Modem Products, Accused Set Top Products and/or the Accused Services.

5 242. ~~237.~~ Each aspect of the functioning of the Accused Cable Modem
6 Products and Accused Set Top Products described in the claim chart operates while
7 deployed to customer premises in a manner controlled and intended by Comcast.

8 243. ~~238.~~ Comcast provides no software, support, or other facility to
9 customers to modify any aspect of the functioning described in the claim chart of the
10 Accused Cable Modem Products and Accused Set Top Products while deployed to
11 customer premises.

12 244. ~~239.~~ Comcast directly infringes at least ~~Claim 1~~ Claims 1-4, 6, 8, and 9 of
13 the '826 Patent by using, importing, selling, and/or offering for sale the Accused
14 Cable Modem Products and Accused Set Top Products (for example, the ~~Arris~~
15 ~~AX013ANM-STB~~ Technicolor CGM4140 cable modem) and/or the Accused Services
16 (for example, monitoring signals by the Accused Cable Modem Products and Accused
17 Set Top Products).

18 245. ~~240.~~ The use of the Accused Cable Modem Products and Accused Set
19 Top Products by Comcast to, for example, demonstrate products in brick-and-mortar
20 stores at 685 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H
21 Street, Suite B, Lompoc, California 93436, or to, for example, test those products,
22 constitute acts of direct infringement of at least ~~Claim 1~~ Claims 1-4, 6, 8, and 9 of the
23 '826 Patent.

24 246. ~~241.~~ Comcast has known of or has been willfully blind to the '826 Patent
25 no later than the day before [REDACTED]

26 247. ~~242.~~ Comcast has known of or has been willfully blind to the '826 Patent
27 since before the August 9, 2022 communication from Entropic.
28

1 248. ~~243.~~ Comcast has been aware that it infringes the '826 Patent since well
2 before, and no later than the date of, its receipt of Entropic's August 9, 2022
3 communication, attached as Exhibit 17. Since obtaining knowledge of the '826 Patent
4 and its infringing activities, Comcast has failed to cease its infringing activities.

5 249. ~~244.~~ Customers and subscribers of Comcast infringe at least ~~Claim~~
6 ~~1~~ Claims 1-4, 6, 8, and 9 of the '826 Patent by using the claimed system, at least
7 during the use of the Accused Cable Modem Products and Accused Set Top Products
8 ~~(for example, the Arris AX013ANM-STB).~~

9 250. ~~245.~~ Comcast actively induces customers' direct infringement. For
10 example, Comcast actively induces infringement of at least ~~Claim 1~~ Claims 1-4, 6, 8,
11 and 9 of the '826 Patent by providing the Accused Cable Modem Products and
12 Accused Set Top Products to Comcast customers with specific instructions and/or
13 assistance (including installation) regarding the use of the Accused Cable Modem
14 Products and Accused Set Top Products to infringe the '826 Patent in accordance with
15 the ordinary course of operation through the provision of the Accused Services.
16 Comcast provides the signal monitoring claimed by the '826 Patent via the Accused
17 Services, which enable and induce its customers to directly infringe the '826 Patent.
18 For at least the above-listed reasons, Comcast aids, instructs, supports, and otherwise
19 acts with the intent to cause an end user to use the Accused Cable Modem Products
20 and Accused Set Top Products to infringe at least ~~Claim 1~~ Claims 1-4, 6, 8, and 9 of
21 the '826 Patent.

22 251. ~~246.~~ Comcast contributes to the customers' direct infringement. Comcast
23 provides apparatuses, namely the Accused Cable Modem Products and Accused Set
24 Top Products, that are used by customers to directly infringe at least ~~Claim 1~~ Claims
25 1-4, 6, 8, and 9 of the '826 Patent.

26 252. ~~247.~~ The Accused Cable Modem Products and Accused Set Top Products
27 have no substantial noninfringing uses. When an end user uses the Accused Set Top
28 Products to receive the Accused Services, the end user directly infringes at least ~~Claim~~

1 ~~4~~Claims 1-4, 6, 8, and 9 of the '826 Patent. The Accused Cable Modem Products and
2 Accused Set Top Products are especially made or especially adapted for use in an
3 infringing manner.

4 253. ~~248.~~ Comcast's inducement of, and contribution to, the direct
5 infringement of at least ~~Claim 1~~Claims 1-4, 6, 8, and 9 of the '826 Patent is
6 continuous and ongoing through acts such as providing the Accused Cable Modem
7 Products and Accused Set Top Products to Comcast customers, which enables those
8 customers to receive the Accused Services; Comcast's provision of the Accused
9 Services; and technical assistance provided by Comcast for equipment it provides to
10 its customers in support of the provision of the Accused Services.

11 254. ~~249.~~ Comcast's infringement of the '826 Patent is, has been, and
12 continues to be willful, intentional, deliberate, and/or in conscious disregard for
13 Entropic's rights under the patent.

14 255. ~~250.~~ Entropic has been damaged as a result of the infringing conduct
15 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic
16 for Comcast's infringement, which by law cannot be less than a reasonable royalty,
17 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

18 256. ~~251.~~ No apparatus claims of the '826 Patent are presently asserted.
19 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

20 COUNT VI

21 (Infringement of the '682 Patent)

22 257. ~~252.~~ Entropic incorporates by reference each allegation of the paragraphs
23 above as if fully set forth herein.

24 258. Entropic served infringement contentions which included a claim chart
25 for the '682 Patent on September 15, 2023.

26 259. ~~253.~~ The '682 Patent duly issued on November 20, 2018 from an
27 application filed January 9, 2018, an application filed February 16, 2017, an
28

1 application filed August 4, 2016, an application filed July 23, 2013, and, *inter alia* a
2 provisional application filed July 23, 2012.

3 260. ~~254.~~ Entropic owns all substantial rights, interest, and title in and to the
4 '682 Patent, including the sole and exclusive right to prosecute this action and enforce
5 the '682 Patent against infringers and to collect damages for all relevant times.

6 261. ~~255.~~ The '682 Patent generally describes a method performed by a cable
7 modem termination system and/or converged cable access platform, the method
8 including determining a corresponding signal-to-noise-ratio ("SNR") related metric,
9 assigning cable modems to service groups based on a respective corresponding
10 SNR-related metric, generating a composite SNR-related metric based on a worst-case
11 SNR profile, selecting a physical layer communication parameter to be used for
12 communicating with a service group based on a composite SNR-related metric, and
13 communicating with cable modems in the service group using the selected physical
14 layer communication parameter. A true and accurate copy of the '682 Patent is
15 attached hereto as Exhibit 11.

16 262. ~~256.~~ The '682 Patent is directed to patent-eligible subject matter pursuant
17 to 35 U.S.C. § 101.

18 263. ~~257.~~ The '682 Patent is valid and enforceable, and presumed as such,
19 pursuant to 35 U.S.C. § 282.

20 264. ~~258.~~ Comcast deploys one or more of the Accused Cable Modem
21 Products in connection with operating and providing the Accused Services.

22 265. ~~259.~~ The Accused Cable Modem Products deployed by Comcast to
23 customer premises remain the property of Comcast while deployed.

24 266. ~~260.~~ The Accused Cable Modem Products operate while deployed in a
25 manner controlled and intended by Comcast.

26 267. ~~261.~~ As set forth in the attached nonlimiting claim chart (Exhibit 12),
27 Comcast has directly infringed and is infringing at least ~~Claim 1~~ Claims 1-5 and 9 of
28

1 the '682 Patent by using, importing, selling, and/or offering for sale the Accused
2 Services.

3 268. ~~262.~~ Each aspect of the functioning of the Accused Cable Modem
4 Products described in the claim chart operates while deployed to customer premises in
5 a manner controlled and intended by Comcast.

6 269. ~~263.~~ Comcast provides no software, support, or other facility to
7 customers to modify any aspect of the functioning described in the claim chart of the
8 Accused Cable Modem Products while deployed to customer premises.

9 270. ~~264.~~ Comcast directly infringes at least ~~Claim 1~~ Claims 1-5 and 9 of the
10 '682 Patent by using, importing, selling, and/or offering for sale the Accused
11 Services, which utilize cable modem termination systems and/or converged cable
12 access platforms that communicate with the Accused Cable Modem Products (for
13 example, the Technicolor CGM4140 cable modem).

14 271. ~~265.~~ The use of the Accused Services by Comcast to, for example,
15 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa
16 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,
17 or to, for example, test those products, constitute acts of direct infringement of at least
18 ~~Claim 1~~ Claims 1-5 and 9 of the '682 Patent.

19 272. ~~266.~~ Comcast has known of or has been willfully blind to the '682 Patent
20 no later than the day before [REDACTED]

21 273. ~~267.~~ Comcast has known of or has been willfully blind to the '682 Patent
22 since before the August 9, 2022 communication from Entropic.

23 274. ~~268.~~ Comcast has been aware that it infringes the '682 Patent since well
24 before, and no later than the date of, its receipt of Entropic's August 9, 2022
25 communication, attached as Exhibit 17. Since obtaining knowledge of the '682 Patent
26 and its infringing activities, Comcast has failed to cease its infringing activities.

275. ~~269.~~Comcast's infringement of the '682 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

276. ~~270.~~ Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

277. ~~271.~~—No apparatus claims of the '682 Patent are presently asserted. Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

COUNT VII

(Infringement of the '866 Patent)

278. ~~272.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

279. Entropic served infringement contentions which included a claim chart for the '866 Patent on September 15, 2023.

280. ~~273.~~ The '866 Patent duly issued on July 5, 2022 from an application filed January 28, 2022, an application filed March 30, 2021, an application filed June 4, 2019, an application filed October 24, 2017, an application filed November 23, 2015, an application filed February 10, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

281. ~~274.~~ Entropic owns all substantial rights, interest, and title in and to the '866 Patent, including the sole and exclusive right to prosecute this action and enforce the '866 Patent against infringers and to collect damages for all relevant times.

282. ~~275.~~—The '866 Patent generally describes a cable television device that digitizes an entire input signal, concurrently selects a plurality of desired channels from the digitized input signal without selecting any undesired channels, and provides

1 the plurality of desired channels. A true and accurate copy of the '866 Patent is
2 attached hereto as Exhibit 13.

3 283. ~~276.~~ The '866 Patent is directed to patent-eligible subject matter pursuant
4 to 35 U.S.C. § 101.

5 284. ~~277.~~ The '866 Patent is valid and enforceable, and presumed as such,
6 pursuant to 35 U.S.C. § 282.

7 285. ~~278.~~ Comcast deploys one or more of the Accused Set Top Products in
8 connection with operating and providing the Accused Services.

9 286. ~~279.~~ The Accused Set Top Products deployed by Comcast to customer
10 premises remain the property of Comcast while deployed.

11 287. ~~280.~~ The Accused Set Top Products operate while deployed in a manner
12 controlled and intended by Comcast.

13 288. ~~281.~~ As set forth in the attached nonlimiting claim chart (Exhibit 14),
14 Comcast has directly infringed and is infringing at least ~~Claim~~Claims 27, 28, 33, 36,
15 37, 41, 42, 47, 50, and 51 of the '866 Patent by using, importing, selling, and/or
16 offering for sale the Accused Set Top Products and/or the Accused Services.

17 289. ~~282.~~ Each aspect of the functioning of the Accused Set Top Products
18 described in the claim chart operates while deployed to customer premises in a
19 manner controlled and intended by Comcast.

20 290. ~~283.~~ Comcast provides no software, support, or other facility to
21 customers to modify any aspect of the functioning described in the claim chart of the
22 Accused Set Top Products while deployed to customer premises.

23 291. ~~284.~~ Comcast directly infringes at least ~~Claim~~Claims 27, 28, 33, 36, 37,
24 41, 42, 47, 50, and 51 of the '866 Patent by using, importing, selling, and/or offering
25 for sale the Accused Set Top Products (for example, the Arris AX013ANM STB)
26 and/or the Accused Services (for example, digitizing and selecting desired television
27 channels from an input signal).

1 292. ~~285.~~ The use of the Accused Set Top Products by Comcast to, for
2 example, demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd.,
3 Santa Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California
4 93436, or to, for example, test those products, constitute acts of direct infringement of
5 at least ~~Claim~~Claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent.

6 293. ~~286.~~ Comcast has known of or has been willfully blind to the '362
7 family, of which the '866 Patent is a member, no later than the day before [REDACTED]

8 [REDACTED]
9 294. ~~287.~~ Comcast has known of or has been willfully blind to the '866 Patent
10 since before the August 9, 2022 communication from Entropic.

11 295. ~~288.~~ Comcast has been aware that it infringes the '866 Patent since well
12 before, and no later than the date of, its receipt of Entropic's August 9, 2022
13 communication, attached as Exhibit 17. Since obtaining knowledge of the '866 Patent
14 and its infringing activities, Comcast has failed to cease its infringing activities.

15 296. ~~289.~~ Customers and subscribers of Comcast infringe at least ~~Claim~~Claims
16 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent by using the claimed
17 system, at least during the use of the Accused Set Top Products ~~(for example, the~~
18 ~~Arris AX013ANM STB).~~

19 297. ~~290.~~ Comcast actively induces customers' direct infringement. For
20 example, Comcast actively induces infringement of at least ~~Claim~~Claims 27, 28, 33,
21 36, 37, 41, 42, 47, 50, and 51 of the '866 Patent by providing the Accused Set Top
22 Products to Comcast customers with specific instructions and/or assistance (including
23 installation) regarding the use of the Accused Set Top Products to infringe the '866
24 Patent in accordance with the ordinary course of operation through the provision of
25 the Accused Services. For at least the above-listed reasons, Comcast aids, instructs,
26 supports, and otherwise acts with the intent to cause an end user to use the Accused
27 Set Top Products to infringe at least ~~Claim~~Claims 27, 28, 33, 36, 37, 41, 42, 47, 50,
28 and 51 of the '866 Patent.

1 304. ~~297.~~ Entropic incorporates by reference each allegation of the paragraphs
2 above as if fully set forth herein.

3 305. Entropic served infringement contentions which included a claim chart
4 for the '206 Patent on September 15, 2023.

5 306. ~~298.~~ The '206 Patent duly issued on July 26, 2022 from an application
6 filed January 28, 2022, an application filed March 30, 2021, an application filed June
7 4, 2019, an application filed October 24, 2017, an application filed November 23,
8 2015, an application filed February 10, 2015, an application filed August 8, 2013, an
9 application filed April 19, 2010, and, *inter alia* a provisional application filed April
10 17, 2009.

11 307. ~~299.~~ Entropic owns all substantial rights, interest, and title in and to the
12 '206 Patent, including the sole and exclusive right to prosecute this action and enforce
13 the '206 Patent against infringers and to collect damages for all relevant times.

14 308. ~~300.~~ The '206 Patent generally describes ~~a receiver system that~~
15 ~~receives~~receiving an input signal from a cable network, ~~digitizes~~digitizing the entire
16 input signal, ~~concurrently selects~~selecting a plurality of desired channels from the
17 digitized input signal without selecting any undesired channels, and
18 ~~provides~~providing the plurality of desired channels. A true and accurate copy of the
19 '206 Patent is attached hereto as Exhibit 15.

20 309. ~~301.~~ The '206 Patent is directed to patent-eligible subject matter pursuant
21 to 35 U.S.C. § 101.

22 310. ~~302.~~ The '206 Patent is valid and enforceable, and presumed as such,
23 pursuant to 35 U.S.C. § 282.

24 311. ~~303.~~ Comcast deploys one or more of the Accused Cable Modem
25 Products and Accused Set Top Products in connection with operating and providing
26 the Accused Services.

1 312. ~~304.~~ The Accused Cable Modem Products and Accused Set Top Products
2 deployed by Comcast to customer premises remain the property of Comcast while
3 deployed.

4 313. ~~305.~~ The Accused Cable Modem Products and Accused Set Top Products
5 operate while deployed in a manner controlled and intended by Comcast.

6 314. ~~306.~~ As set forth in the attached nonlimiting claim chart (Exhibit 16),
7 Comcast has directly infringed and is infringing at least ~~Claim~~ Claims 13, 14, 19, 21,
8 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent by using, selling,
9 and/or offering for sale the Accused Services through the Accused Cable Modem
10 Products and Accused Set Top Products.

11 315. ~~307.~~ Each aspect of the functioning of the Accused Cable Modem
12 Products and Accused Set Top Products described in the claim chart operates while
13 deployed to customer premises in a manner controlled and intended by Comcast.

14 316. ~~308.~~ Comcast provides no software, support, or other facility to
15 customers to modify any aspect of the functioning described in the claim chart of the
16 Accused Cable Modem Products and Accused Set Top Products while deployed to
17 customer premises.

18 317. ~~309.~~ Comcast directly infringes at least ~~Claim~~ Claims 13, 14, 19, 21, 23,
19 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent by using, importing,
20 selling, and/or offering for sale the Accused Cable Modem Products (for example, the
21 Technicolor CGM4140 cable modem), Accused Set Top Products (for example, the
22 Arris AX013ANM STB), and/or the Accused Services (for example, digitizing and
23 selecting desired ~~television~~ channels from an input signal).

24 318. ~~310.~~ The use of the Accused Services through the Accused Cable Modem
25 Products and Accused Set Top Products by Comcast to, for example, demonstrate
26 products in brick-and-mortar stores at 685 East Betteravia Rd., Santa Maria,
27 California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436, or to,
28 for example, test those products, constitute acts of direct infringement of at least


1 ~~Claim~~ Claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206
2 Patent.

3 319. ~~311.~~ Customers and subscribers of Comcast infringe at least ~~Claim~~ Claims
4 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of the '206 Patent by
5 using the claimed method, at least during receipt of the Accused Services utilizing, for
6 example, the Accused Cable Modem Products and Accused Set Top Products (for
7 example, the ~~Arris AX013ANM-STB~~ Technicolor CGM4140 cable modem).

8 320. ~~312.~~ The Accused Cable Modem Products and Accused Set Top Products
9 have no substantial noninfringing uses. When an end user uses the Accused Cable
10 Modem Products and Accused Set Top Products to receive the Accused Services, the
11 end user directly infringes at least ~~Claim~~ Claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35,
12 38, 39, 44, 47, and 48 of the '206 Patent. The Accused Cable Modem Products and
13 Accused Set Top Products are especially made or especially adapted for use in an
14 infringing manner.

15 321. ~~313.~~ Entropic has been damaged as a result of the infringing conduct
16 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic
17 for Comcast's infringement, which by law cannot be less than a reasonable royalty,
18 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

19 322. ~~314.~~ No apparatus claims of the '206 Patent are presently asserted.
20 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

21 323. ~~315.~~ Comcast has known of or has been willfully blind to the '362
22 family, of which the '206 Patent is a member, no later than the day before signing the
23 

24 324. ~~316.~~ Since obtaining knowledge of the '362 family, of which the '206
25 Patent is a member, and its infringing activities, Comcast has failed to cease its
26 infringing activities.

325. ~~317.~~Comcast's infringement of the '206 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

COUNT IX

(Infringement of the '275 Patent)

326. Entropic incorporates by reference each allegation of the paragraphs
above as if fully set forth herein.

327. Entropic served an infringement contention claim chart for the '275 Patent on November 3, 2023.

328. The '275 Patent duly issued on October 10, 2023 from an application filed September 30, 2022, an application filed July 12, 2022, an application filed January 28, 2022, an application filed March 30, 2021, an application filed June 4, 2019, an application filed October 24, 2017, an application filed November 23, 2015, an application filed February 10, 2015, an application filed August 8, 2013, an application filed April 19, 2010, and, *inter alia* a provisional application filed April 17, 2009.

329. Entropic owns all substantial rights, interest, and title in and to the '275 Patent, including the sole and exclusive right to prosecute this action and enforce the '275 Patent against infringers and to collect damages for all relevant times.

330. The '275 Patent generally describes a wideband receiver system that digitizes an input signal, selects desired channels from the digitized signal, and outputs the selected desired channels for demodulation. A true and accurate copy of the '275 Patent is attached hereto as Exhibit 18.

331. The '275 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

332. The '275 Patent is valid and enforceable, and presumed as such, pursuant
to 35 U.S.C. § 282.

1 333. Comcast deploys one or more of the Accused Set Top Products in
2 connection with operating and providing the Accused Services.

3 334. The Accused Set Top Products deployed by Comcast to customer
4 premises remain the property of Comcast while deployed.

5 335. The Accused Set Top Products operate while deployed in a manner
6 controlled and intended by Comcast.

7 336. As set forth in the attached nonlimiting claim chart (Exhibit 19), Comcast
8 has directly infringed and is infringing at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18,
9 and 20 of the '275 Patent by using, selling, and/or offering for sale the Accused
10 Services through the Accused Set Top Products.

11 337. Each aspect of the functioning of the Accused Set Top Products
12 described in the claim chart operates while deployed to customer premises in a
13 manner controlled and intended by Comcast.

14 338. Comcast provides no software, support, or other facility to customers to
15 modify any aspect of the functioning described in the claim chart of the Accused Set
16 Top Products while deployed to customer premises.

17 339. Comcast directly infringes at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18,
18 and 20 of the '275 Patent by using, importing, selling, and/or offering for sale the
19 Accused Set Top Products (for example, the Arris AX013ANM STB) and/or the
20 Accused Services (for example, digitizing and selecting desired channels from an
21 input signal).

22 340. The use of the Accused Services through the Accused Set Top Products
23 by Comcast to, for example, demonstrate products in brick-and-mortar stores at 685
24 East Betteravia Rd., Santa Maria, California, 93454; and 1145 N. H Street, Suite B,
25 Lompoc, California 93436, or to, for example, test those products, constitute acts of
26 direct infringement of at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18, and 20 of the
27 '275 Patent.

1 341. Customers and subscribers of Comcast infringe at least Claims 1, 2, 5, 7,
2 8, 10-12, 15, 17, 18, and 20 of the '275 Patent by using the claimed method, at least
3 during receipt of the Accused Services utilizing, for example, the Accused Set Top
4 Products.

5 342. The Accused Set Top Products have no substantial noninfringing uses.
6 When an end user uses the Accused Set Top Products to receive the Accused
7 Services, the end user directly infringes at least Claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18,
8 and 20 of the '275 Patent. The Accused Set Top Products are especially made or
9 especially adapted for use in an infringing manner.

10 343. Entropic has been damaged as a result of the infringing conduct alleged
11 above. Comcast is liable to Entropic in an amount that compensates Entropic for
12 Comcast's infringement, which by law cannot be less than a reasonable royalty,
13 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

14 344. Comcast has known of or has been willfully blind to the '362 family, of
15 which the '275 Patent is a member, no later than the day before signing the [REDACTED]
16 [REDACTED]

17 345. Since obtaining knowledge of the '362 family, of which the '275 Patent
18 is a member, and its infringing activities, Comcast has failed to cease its infringing
19 activities.

20 346. Comcast has known of or has been willfully blind to the '275 Patent
21 since at least November 3, 2023, when Entropic served Comcast its infringement
22 contention claim charts.

23 347. Comcast has been aware that it infringes the '275 Patent since well
24 before, and no later than the date of, its receipt of Entropic's infringement contention
25 claim charts served on November 3, 2023. Since obtaining knowledge of the '275
26 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

348. Comcast’s infringement of the ’275 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic’s rights under the patent.

349. Entropic is aware of no obligation to mark any instrumentality with the
'275 Patent in accordance with 35 U.S.C. § 287.

COUNT X

(Infringement of the '438 Patent)

350. Entropic incorporates by reference each allegation of Paragraphs 1 through 349.

351. Entropic served an infringement contention claim chart for the '438 Patent on November 3, 2023.

352. The '438 Patent duly issued on January 9, 2018, from an application filed February 16, 2017, an application filed August 4, 2016, an application filed July 23, 2013, and, *inter alia* a provisional application filed July 23, 2012.

353. Entropic owns all substantial rights, interest, and title in and to the '438 Patent, including the sole and exclusive right to prosecute this action and enforce the '438 Patent against infringers and to collect damages for all relevant times.

354. The '438 Patent generally describes a mechanism for determining communication parameters for communications between a cable modem termination system and cable modems. A true and accurate copy of the '438 Patent is attached hereto as Exhibit 20.

355. The '438 Patent is directed to patent-eligible subject matter pursuant to
35 U.S.C. § 101.

356. The '438 Patent is valid and enforceable, and presumed as such, pursuant
to 35 U.S.C. § 282.

357. Comcast deploys one or more of the Accused Cable Modem Products and Accused Set Top Products in connection with operating and providing the Accused Services.

1 358. The Accused Cable Modem Products and Accused Set Top Products
2 deployed by Comcast to customer premises remain the property of Comcast while
3 deployed.

4 359. The Accused Cable Modem Products operate while deployed in a manner
5 controlled and intended by Comcast.

6 360. As set forth in the attached nonlimiting claim chart (Exhibit 21), Comcast
7 has directly infringed and is infringing at least Claims 1-5 and 9 of the '438 Patent, by
8 using, importing, selling, and/or offering for sale the Accused Services.

9 361. Each aspect of the functioning of the Accused Cable Modem Products
10 and Accused Set Top Products described in the claim chart operates while deployed to
11 customer premises in a manner controlled and intended by Comcast.

12 362. Comcast provides no software, support, or other facility to customers to
13 modify any aspect of the functioning described in the claim chart of the Accused
14 Cable Modem Products and Accused Set Top Products while deployed to customer
15 premises.

16 363. Comcast directly infringes at least Claims 1-5 and 9 of the '438 Patent by
17 using, importing, selling, and/or offering for sale the Accused Services, which utilize
18 cable modem termination systems and/or converged cable access platforms that
19 communicate with the Accused Cable Modem Products and Accused Set Top
20 Products (for example, the Technicolor CGM4140 cable modem).

21 364. The use of the Accused Services by Comcast to, for example,
22 demonstrate products in brick-and-mortar stores at 685 East Betteravia Rd., Santa
23 Maria, California, 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436,
24 or to, for example, test those products, constitute acts of direct infringement of at least
25 Claims 1-5 and 9 of the '438 Patent.

26 365. Comcast has known of or has been willfully blind to the '682 family, of
27 which the '438 Patent is a member, no later than the day before signing the [REDACTED]

28 [REDACTED]

1 366. Since obtaining knowledge of the '682 family, of which the '438 Patent
2 is a member, and its infringing activities, Comcast has failed to cease its infringing
3 activities.

4 367. Comcast has been aware that it infringes the '438 Patent since well
5 before, and no later than the date of, its receipt of Entropic's infringement contention
6 claim charts served on November 3, 2023. Since obtaining knowledge of the '438
7 Patent and its infringing activities, Comcast has failed to cease its infringing activities.

8 368. Comcast's infringement of the '438 Patent is, has been, and continues to
9 be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights
10 under the patent.

11 369. Entropic has been damaged as a result of the infringing conduct alleged
12 above. Comcast is liable to Entropic in an amount that compensates Entropic for
13 Comcast's infringement, which by law cannot be less than a reasonable royalty,
14 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

15 370. No apparatus claims of the '438 Patent are presently asserted.
16 Accordingly, there is no duty to mark pursuant to 35 U.S.C. § 287.

17 **PRAYER FOR RELIEF**

18 WHEREFORE, Entropic requests that:

19 A. The Court find that Comcast has directly infringed the Patents-in-Suit
20 and hold Comcast liable for such infringement;

21 B. The Court find that Comcast has indirectly infringed the Patents-in-Suit
22 by inducing its customers to directly infringe the Patents-in-Suit and hold Comcast
23 liable for such infringement;

24 C. The Court find that Comcast has indirectly infringed the Patents-in-Suit
25 by contributing to its customers' direct infringement of the Patents-in-Suit and hold
26 Comcast liable for such infringement;

1 D. The Court award damages pursuant to 35 U.S.C. § 284 adequate to
2 compensate Entropic for Comcast's past infringement of the Patents-in-Suit, including
3 both pre- and post-judgment interest and costs as fixed by the Court;

4 E. The Court find that Comcast willfully infringed the Patents-in-Suit, and
5 increase the damages to be awarded to Entropic by three times the amount found by
6 the jury or assessed by the Court;

7 F. The Court declare that this is an exceptional case entitling Entropic to its
8 reasonable attorneys' fees under 35 U.S.C. § 285; and

9 G. The Court award such other relief as the Court may deem just and proper.

10 **JURY TRIAL DEMANDED**

11 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Entropic hereby
12 requests a trial by jury on all issues raised by this Complaint.
13

14 Dated: November 10, 2023

Respectfully submitted,

15 By: /s/ ~~Connor J. Meggs~~ Cassidy T. Young

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